

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : **08-154006**  
(43)Date of publication of application : **11.06.1996**

(51)Int.CI.

**H01P 3/08**

**H01P 1/203**

**H01P 3/02**

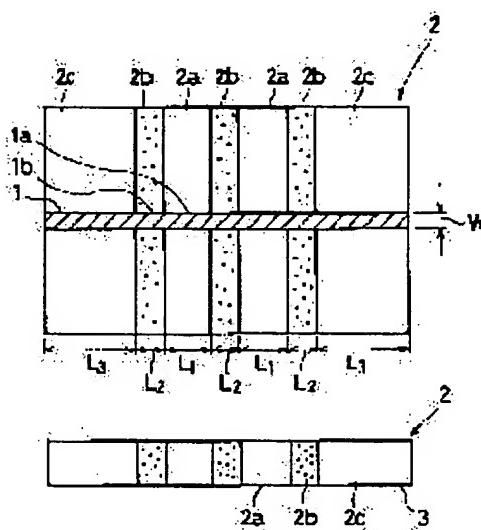
(21)Application number : **06-319321**

(71)Applicant : **MURATA MFG CO LTD**

(22)Date of filing : **28.11.1994**

(72)Inventor : **KAMINAMI SEIJI  
AMACHI NOBUMITSU  
TAKAGI HIROSHI**

## (54) DIELECTRIC SUBSTRATE



### (57)Abstract:

**PURPOSE:** To miniaturize two conductor transmission line elements by forming any arbitrary part of a part to arrange a transmission line from a material for which the dielectric constant is made different from that of the surrounding part.

**CONSTITUTION:** When the dielectric substrate with an equal entire dielectric constant is used, the part to form a large electrode pattern (the transmission line) is replaced with the material, for which the dielectric constant is larger than that of the other part, so that the electrode pattern can be miniaturized. Concerning a dielectric substrate 2 to be used for a low-pass filter, for example, the material with dielectric constant  $\epsilon_r=17.0$  and length  $L_1=4.310\text{mm}$  is arranged for a part 2a, the material with dielectric constant  $\epsilon_r=60.0$  and length  $L_1=2.178\text{mm}$  is arranged for a part 2b, and the material with dielectric constant  $\epsilon_r=17.0$  and length  $L_1=10.00\text{mm}$  is used for a part 2c so that this dielectric substrate can be formed. As a result, the characteristic

impedance of the electrode part 1a formed at the part 2a with the small dielectric constant is turned to  $50.0\Omega$  and that of the part 2b with the large dielectric constant is similarly turned to  $25.3\Omega$ . Thus, the area of the electrode pattern is reduced to about 1/4 of conventional area without changing the width of the electrode pattern 1 and desired filtering characteristics can be provided.

**LEGAL STATUS**

[Date of request for examination] 26.11.2001

[Date of sending the examiner's decision of rejection] 01.04.2003

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office